

Regulatory Guide Periodic Review

Regulatory Guide Number: 1.105, Revision 3
Title: Setpoints for Safety-Related Instrumentation
Office/division/branch: RES/DE/ICEEB
Technical Lead: Paul Rebstock
Staff Action Decided: Revise

1. What are the known technical or regulatory issues with the current version of the regulatory Guide (RG)?

Regulatory Guide 1.105 addresses the selection of setpoints for automatic actuation of safety functions in nuclear power plants. Revision 3 of RG 1.105 was issued in 1999 and addresses the ANSI/ISA-S67.04, Part 1-1994, "Setpoints for Nuclear Safety-Related Instrumentation," standard.

In 2006, the NRC staff issued RIS-2006-017, "NRC Staff Position on the Requirements of 10 CFR 50.36, 'Technical Specifications,' Regarding Limiting Safety System Settings During Periodic Testing and Calibration of Instrument Channels." RIS-2006-017 addresses setpoint selection and the selection of related limits to be recorded in plant Technical Specifications.

Revision 3 of RG 1.105, and the associated industry standard, do not address the staff's concerns regarding the selection and maintenance of instrument setpoints that were the subject of extensive NRC/industry discussions in the 2004 to 2006 timeframe and that resulted in the issuance of RIS-2006-017. If the guidance is not updated, the criteria for the selection and maintenance of instrument setpoints may continue to be subject to interpretation by individual analysts and reviewers. Issues such as the manner of addressing the 95/95 criterion and other statistical considerations, such as the acceptance criteria for the likelihood of violating established parameter limits, will remain unresolved.

Draft regulatory guide DG-1141 (a draft for revision 4 to RG 1.105) was issued for public comment in June of 2014. More than 600 comments were received from various organizations and individuals. DG-1141 addressed the 2006 version of the industry standard, and incorporated relevant material from RIS-2006-017 and other technical material deemed appropriate by NRC Staff. Because many of the staff concerns, including the results of the extensive discussions leading to the issuance of the RIS, are not addressed in the 2006 version of the standard, DG-1141 includes a large amount of technical detail and clarification.

The ANSI/ISA-S67.04, Part 1-1994 standard has been revised multiple times, with the most recent revision occurring in late 2018 as ANSI/ISA 67.04.01-2018, "Setpoints for Nuclear Safety-Related Instrumentation." The NRC is currently reviewing this revised standard. The NRC will review the staff concerns regarding the 2006 version of the ANSI/ISA standard as addressed in DG 1141, and also any new issues in the revised standard. Based on its review, the NRC will decide whether to endorse the revised

standard, or endorse it with appropriate conditions, in the final version of the Regulatory Guide.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues in terms of anticipated numbers of licensing and inspection activities over the next several years?

It is not likely that there will be a significant number of LARs involving instrument setpoints in the next several years, but a revised RG will be helpful in the review of future license applications. The revised RG may also be beneficial to inspection activities in that it will provide background, context, and technical information useful in inspections related to instrument setpoints.

3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?

The amount of effort required to revise DG-1141 to address the revised industry standard is difficult to estimate. Should the standard appropriately address the staff's concerns in DG-1141, the level of effort may be relatively small, and likely less than one FTE. However, should there be significant external stakeholder interest and comment, as was the case when DG-1141 was initially issued for public comment, it seems reasonable to expect that the revision effort will be something on the order of one to three FTE.

4. Based on the answers to the questions above, what is the staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?

Revise RG 1.105, taking into account the issues addressed in DG-1141, the comments received on DG-1141, and the revised ANSI/ISA-67.04.01 standard.

5. Provide a conceptual plan and timeframe to address the issues identified during the review.

The staff will review the revision to ANSI/ISA-67.04.01 and develop a new draft revision of RG 1.105 for public comment. The NRC plans to develop the draft RG by the end of June 2019, and issue the draft RG for public comment by the end of December 2019.

NOTE: This review was conducted in January 2019 and reflects the staff's plans as of that date. These plans are tentative and are subject to change.